The Information Content of Accruals in the Emerging Capital Market of China

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Abstract

Security valuation has been prominent in the accounting literature for many years. Although there is general agreement that stock price are related to future cash flows, there has been controversy about the usefulness of the accrual component of earnings in signaling stock prices. Prior studies on the information content of accruals focus on the use of data in the mature market of the US. This study extends this line of research to the emerging capital market of China. The evidence suggests that China's capital market attaches value to accruals and accruals have incremental information content over operating cash flows, though the market seems to respond more favorably to the latter. The results show that the market perceives accruals to be comprised of two components that are differently priced and both non-discretionary and discretionary components of accruals contribute to the value-relevance of earnings. In addition, discretionary accruals provide incremental information content beyond that provided by the non-discretionary component of earnings, which indicates that the opportunities for earnings management inherent in the current Chinese reporting system do not eliminate the usefulness of accounting earnings for valuing shares.

中國新興資本市場中會計應計項目的信息含量研究

摘要

股票估價在會計文獻中成爲主要課題已有多年。雖然股價與未來現金流量相關的觀點已基本一致，但是關於盈利中應計項目部分在向股價傳遞信息中的有效性仍有爭議。早先關於會計應計項目的研究多採用美國成熟市場作樣本，本文將這個研究方向延伸到中國的新興資本市場。雖然有蹟象表明營運現金流量對中國市場的影響更大，本文結果顯示應計項目爲中國市場的股票估價提供信息並對於營運現金流量有遞增信息量。結果表明中國市場中總應計項目的自決和非自決部分爲股票估價提供不同信息量且均有助於盈利的價值相關性。此外，自決應計項目對於非自決盈利有遞增信息量，這説明存在於中國現行報表制度中的盈利管理並未消除會計盈利在股票估價中的有效性。

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1. Introduction

Earnings have been prominent in the market-based accounting research for many years and the role of accounting earnings in pricing securities is a fundamentally important issue in accounting research. Beginning with Ball and Brown (1968), many researchers have explored the relationship between earnings and security prices (Beaver and Dukes 1972; Watts and Zimmerman 1986; Easton and Harris 1991; Warfield and Wild 1992; Beaver 1998). While using various samples, time periods, and methodologies, the conclusion is consistent with the results that accounting earnings are priced by the stock market.

In recent years, attention has also focused on the components of earnings (operating cash flows and accruals). Empirical research indicates that the components of earnings play an important role in the valuation process. There are evidences that both components have incremental information content and accruals provide incremental information content beyond that provided by operating cash flows, though they are differently priced by the market (e.g., Wilson 1986&1987; Rayburn 1986; Bowen et al. 1987). There is also research that finds no evidence that either component has incremental information content (e.g., Bernard and Stober 1989).

Accruals play a traditional role in correcting timing and matching problems inherent in cash flow measures of firm performance (Dechow 1994). At the same time, the reliability and usefulness of accruals in a valuation context has been questioned by some financial analysts (e.g., Brealey and Myers 1981). The main reason they argue is that managers can manipulate accruals to alter reported earnings through the flexibility accorded under various GAAP. Therefore, accrual-based earnings are subject to managerial discretion. A variety of papers have studied accrual management around the time of going private transactions (DeAngelo 1986), labor union contract negotiations (Liberty and Zimmerman 1986), import relief investigations (Jones 1991), and anti-trust investigations (Cahan 1992). Recent studies have investigated in managers' choice of discretionary accruals on compensation (Balsam 1998), political cost (Han and Wang 1998), and auditor change decisions (Defond and Subramanyam 1998).

Therefore, accountants are interested to know whether accruals add information to operating cash flows to improve earnings' ability to explain returns and whether the benefit of accrual-based earnings is because of managers' discretionary accounting choice. While there have been cumulative findings about the information content of accruals, the research on the information content of discretionary component of accruals is of recent origin. The exclusion of special discretionary items improves the ability of earnings to explain returns (DeAngelo, DeAngelo, and Skinner 1993; Dechow 1994). The discretionary component in commercial banks' loan loss disclosures is priced by the market (Walhen 1994; Beaver and Engel 1996). There is also evidence of the incremental information

content of discretionary accruals (Subramanyam 1996). While these studies have the findings in the mature markets in developed economies, the information content of accounting accruals has yet to be documented in the emerging capital market in China's transitional economy.

The accounting standards are better known and investors have access to more timely information on firm performance in a mature market. In China, the accounting standards and practices are still at the development stage and most listed Chinese firms are relatively young and little known to foreign investors (Haw, Qi and Wu 1998). The financial reporting and capital market systems are relatively primitive and incomplete, and the quality of auditing is generally perceived to be low, compared to mature markets in developed economies such as the US and UK (Aharony, Lee, and Wong 1999). Unlike the latter markets where investors are well informed under sophisticated accounting systems, some argue that accounting information in emerging capital markets like China may not be very useful to investors. Therefore, one may question whether the findings on the incremental information content of accruals in the mature markets in developed economies are applicable to the emerging capital market in China's transitional economy.

This study examines the information content of accruals and its components in China's emerging capital market. The issue is investigated by regressing returns on the levels of earnings and its components. The coefficients and explanatory power of the regression models are compared with the objective of assessing the relative value-relevance and incremental information content of different measures. The analysis is conducted on a sample of 1,037 firm-years during 1995-97. Total

accruals are computed as consistent with previous studies of earnings management (e.g., Healy 1985; Jones 1991; Dechow, Sloan, and Sweeney 1995; Haw, Qi, Wu and Zhang 1998). Discretionary accruals are estimated using the cross-sectional variation of the Jones model similarly used in previous studies (e.g., Jones 1991; Cahan 1992; DeFond and Jimbalvo 1994; Subramanyam 1996; Han and Wong 1997; Haw, Qi, Wu and Zhang 1998). The results show that the emerging capital market of China attaches values to accruals and accruals have incremental information content over operating cash flows, though the market seems to responds more favorably to the latter. The evidence helps to explain why earnings are more often reported than operating cash flows in the annual reports of Chinese firms. This study also has the findings that China's emerging capital market perceives accruals to be comprised of two components that are differently priced: a discretionary component and a non-discretionary component. The evidence suggests that both components contribute to the value-relevance of earnings. In addition, discretionary accruals provide incremental information content beyond that contained in the non-discretionary component of earnings, which implies that the flexibility accorded under the PRC-GAAP allows managers to reflect value-relevant information not captured in the non-discretionary component.

2. Background of study

2.1. Previous Studies

It is well recognized that earnings occupy a central position in accounting. The existence of information asymmetries between the firm's managers and outside parties contracting with the firm creates a demand for a summary measure of firm performance. Being a summary measure of firm performance, earnings are widely used by investors and creditors. Accounting earnings are comprised of both accruals and cash flows from operations (operating cash flows). Accruals are interpreted quite broadly. For example, changes in accounts receivable and payable are accruals, as are changes in inventories, and depreciation expense is a negative accrual. Total accruals are generally defined as changes in specific working capital accounts (i.e., accounts receivable, inventory, accounts payable, and income taxes payable) less the current period's depreciation and deferred tax expense (e.g., Healy 1985). Total accruals contain both a discretionary and a non-discretionary component. Non-discretionary accruals are accounting adjustments to the firm's cash flows mandated by accounting standard-setting bodies and discretionary accruals are adjustments to cash flows selected by the manager. The manager chooses discretionary accruals from an opportunity set of generally accepted procedures defined by accounting standard-setting bodies (Healy 1985). Discretionary accruals are often used as a measure of managers' earnings manipulation. Previous studies such as Healy 1985, DeAngelo 1986 and Jones 1991 use some type of discretionary accrual measure and discuss the partitioning of total accruals into discretionary and non-discretionary components.

The role of accounting earnings in pricing securities is a fundamentally important issue in accounting research and explored by many researchers (Watts and

Zimmerman 1986; Easton and Harris 1991; Warfield and Wild 1992; Beaver 1998). The basic conclusions are that earnings and returns are associated and earnings convey information to the market.

Several studies have addressed the relative association of cash flows and earnings with security returns. Ball and Brown (1968) define operating cash flows as net income plus depreciation and amortization and indicate that earnings are more highly associated with security returns than are operating cash flows. Beaver and Dukes (1972) use the same definition of operating cash flows and report stronger correlation between abnormal returns and unexpected accrual-based earnings than that between abnormal returns and unexpected cash flows. Beaver et al. (1982) conduct a cross-sectional pooled regression of observations for years 1977-1978 with raw returns as the dependent variable and cash flow (defined as in Beaver and Dukes) and earnings as independent variables. Their results show that the coefficient of the cash flow variable is significant and adds explanatory power to the earnings variable. However, the results in these studies may be subject to the measurement of cash flows. Gombola and Ketz (1983) provide some evidence that the relative information content of unexpected cash flows and unexpected earnings may depend on whether the current accrual adjustment is included in the measurement of operating cash flows. Therefore, accountants are interested in knowing whether accruals, being the net effect of all recorded operating events during the year other than cash flows, provide information incremental to the cash flow information to aid investors' estimation of future cash flows as asserted by the FASB (1978):

"Information about enterprise earnings based on accrual accounting generally

provides a better indication of an enterprise's present and continuing ability to generate favorable cash flows than information limited to the financial aspects of cash receipts and payments."

Numerous studies have investigated the incremental information content of accruals over cash flows. Wilson (1986) investigates the incremental information content of accruals over cash flows for a ten-year period. He uses daily stock returns and defines cash flows including the adjustments of current accruals. His results support the existence of the incremental information content for current but not long-term accruals beyond operating cash flows. Furthermore, Wilson (1987) examines whether accrual and funds components of earnings have incremental information content over earnings based on stock price behavior around the release of annual reports in 1981 and 1982. He finds that the incremental information content exists when funds are defined as cash flow from operations and his results imply that the market responds to both unexpected cash flows and unexpected current accruals, but more favorably to the former. The same implication can be drawn from Bowen et al. (1987), who use annual returns data for years 1972-1981 and provide evidence on the role of accrual and cash flow measures in an explanatory model of security prices. Their results show that accrual data have incremental information content in addition to that contained in cash flow data, and that the market responds more favorably to cash flow than to current accruals and more favorably to current accruals than to non-current accruals. Rayburn (1986) reports significant association of both operating cash flow and accruals with annual security returns using a single-return model over a 20-year period, where operating

cash flows are constructed from income statement and comparative balance sheet data. But on the other hand, her results imply no difference in the market response to cash flows and current accruals, and the results on non-current accruals are mixed. Similarly, Bernard and Stober (1989) examine whether unexpected cash flows and accruals are significant in the regression where abnormal stock returns are the dependent variable. However, they find little evidence of either component having incremental information for the overall period of 1977-1984. Recently, Dechow (1994) uses stock returns as the benchmark against which to compare realized cash flows and earnings. She concludes that accruals is a superior measure of firm performance than cash flows and makes further discussion that the inclusion of accruals adds to the informativeness of earnings because accruals mitigate timing and mismatching problems inherent in measuring cash flows over short intervals. Cheng, Liu and Schaefer (1997) reevaluates the role of accruals in the relation between stock returns and earnings and suggests that earnings provide significant incremental explanatory power consistent with the role of accruals in mitigating timing and matching problems in cash flow measures.

Because of the flexibility accorded under the General Accepted Accounting Principles (GAAP), accrual-based earnings are subject to managerial discretion. Prior studies have investigated accrual behavior for various reasons. For example, Healy (1985) suggests that managers choose accruals to maximize the value of their bonus awards. DeAngelo (1986) finds no indication that managers systematically select accounting accruals to understate earnings in periods before a management buyout of public stockholders. Managers make income-decreasing accruals during

import relief investigations (Jones 1991). Cahan (1992) investigates the effect of antitrust on their discretionary accruals in response to changes in potential political costs. Guenther (1994) gives evidence on using discretionary accruals as earnings management tool to benefit from income tax rate changes. There are also evidences regarding the effect of accruals on compensation (DeFond and Park 1997; Gaver and Gaver 1998; Balsam 1998), debt convenant violation (Defond and Jiambalvo 1994), political cost (Han and Wang 1998), and auditor change decisions (Defond and Subramanyam 1998). Some studies examine whether transactions and discretionary accruals are executed to achieve regulatory capital, earnings, and tax goals in bank industry (e.g., Scholes, Wilson, and Wolfson 1990; Haw, Jung and Lilien 1991; Collins, Shackelford, and Wahlen 1995).

While there are accumulated findings of various accrual management issues, Healy and Palepu (1993) argue that managerial discretion could enhance earnings' informativeness by allowing communication of private information, on the other hand, managers may use their discretion opportunistically, thereby garbling the reported earnings. Therefore, one may question whether the benefit of accrual accounting is because of managers' discretionary accounting choices.

The examination of the information content of discretionary accruals is of recent origin. DeAngelo, DeAngelo, and Skinner (1993, hereafter DDS) and Dechow (1994) document that the exclusion of special discretionary items improves the ability of earnings to explain returns. DDS focus their accrual-component analysis on non-cash write-offs that are not associated with any transaction whose timing is more likely to reflect managers' accounting discretion. Dechow

demonstrates that working capital accruals are more important for mitigating timing and matching problems on cash flows than long-term operating accruals, while the special items such as one-time charges that induce temporary component in earnings reduce earnings' association with stock returns over short intervals. Walhen (1994) and Beaver and Engel (1996) examine the information content of discretionary component in commercial banks' loan loss disclosures. Walhen indicates that contemporaneous stock returns and earnings announcement date stock price are negatively related with the relatively non-discretionary measures of loan losses and positively related to the discretionary components in unexpected loan loss provisions. Beaver and Engel examine the capital market pricing of discretionary and non-discretionary components of a major accrual in the banking industry. They first decompose the allowance account into estimates of non-discretionary and discretionary components and then evaluate the market's valuation of the estimates of the components. The evidence suggests that the capital market perceives the allowance to be comprised of two components, a non-discretionary component that is negatively priced and a discretionary component whose incremental pricing coefficient is positive. Subramanyam (1996) empirically investigates the pricing of discretionary accruals using a sample of all firm years for which necessary data is available on the Center for Research in Security Prices (CRSP) 1992 and the Compustat 1992 databases. He examines the effect of discretionary accruals on both the efficient and the explanatory power of the regressions on different components of earnings with stock returns and finds that discretionary accruals are associated with contemporaneous stock prices, future earnings and cash flows. His findings

suggest that the market attaches value to discretionary accruals, probably because the discretionary component improves earnings' ability to reflect fundamental value.

While these studies have the findings in efficient markets in the mature and developed economies, two relevant China studies are conducted recently. Using the entire population of B- and H-shares of the listed Chinese firms for 1994-1996 in the TEJ Data Base, Haw, Qi and Wu (1998) examine the value-relevance of accounting earnings under different accounting standards in China. They find that earnings under the People's Republic of China Accounting Standards (PRC-GAAP) are more significantly associated with returns than earnings under International Accounting Standards (IAS). Their evidence suggests that domestic earnings reported in China are value-relevant, but the disclosures mandated by the IAS seem to have limited incremental information content in the emerging capital market. The other study (Haw, Qi, Wu and Zhang 1998), using the entire population of A-share listed Chinese firms from 1994 to 1997, examines whether listed Chinese firms manage earnings to meet regulatory benchmarks. The results suggest that managers of listed Chinese firms execute transactions involving below-the-line items and managed accruals to meet regulatory ROE targets for stock rights offering and/or to reduce the probability of suspension and termination of the listing. While these two studies highlight the value-relevance of earnings and the existence of accrual management in the emerging capital market of China, whether accruals provide additional information in managers' valuation decision in this market has yet to be documented. This study extends this line of inquiry.

2.2. Emerging Capital Market of China

In the course of pursuing gradual liberalization of the Soviet-style central planned economy, the Chinese government has sequentially introduced a series of market-oriented reforms since 1978. The growth rate of the PRC's economy has been among the highest in the world during the last decade. Over the past decade, China's economic has grown at the rate of 9 per cent a year characterized by economic reforms and the "open door" policy. In the 1990's one of the most important structural changes in China is the emergence of security markets. The basic reasons for the government in opening up security markets are to improve the operating performance of state owned enterprises (SOEs) and to promote a market-oriented economy.

Since the late 1980s, the Chinese government has allowed Chinese enterprises to raise capital in the capital markets. This policy has been facilitated both by developing the securities market in China and by listing Chinese companies on international stock exchanges. In 1984, Shanghai Municipal Government approved the first regulation on securities in China. Subsequently Feilo Electronics Ltd. issued China's first stock in November 1984, which began trading in August 1986. In the following years, more SOEs were incorporated through selling shares to their employees and other SOEs. Since 1986, all trading has been executed in the over-the-counter (OTC) market, which had created a lot of confusion and problems. The first official stock exchange in China- Shanghai Stock Exchange (SHSE) was established in December 1990 followed by Shenzhen Stock Exchange (SZSE) in

April 1991. The SHSE commenced on December 19, 1990, while the SZSE started provisional trading on April 3, 1991 and formally opened on July 4, 1991. Since the establishment of these two exchanges, the Shanghai Exchange has been larger in terms of both market capitalization and turnover. Two types of shares are traded on the two stock exchanges: A-shares denominated in Renminbi to Chinese nationals in the SHSE and the SZSE; and B-shares denominated in US dollars in the SHSE and Hong Kong dollars in the SZSE for foreign investors. Total market capitalization of the two stock exchanges is about $50 billion with A-shares, accounting for more than 90% of the total market capitalization. Several large high-profile Chinese companies also list on the Hong Kong and New York stock exchanges.

In July 1992, the Chinese Security Regulatory Commision (CSRC) was set up to monitor and regulate the stock market. Since then, the stock market has grown rapidly. In 1991, there were only 8 and 5 stocks listed on SHSE and SZSE respectively. As of December 1996, 514 firms issued A-shares, among them 69 firms issued B-shares and 14 firms issued H-shares. By the end of 1997, the number of firms listed on these two exchanges has increased to 383 and 362, as shown in panel A of table 1. A-shares dominate share trading on both Shanghai and Shenzhen exchanges. The total 745 listed firms of 1997 consist of 627 firms that only issue A shares; 25 firms that only issue B shares; 76 firms that issue both A and B shares; and 17 firms that issue both A and H shares (China Securities Association 1998).

The total market capitalization of listed firms has increased to 1.753 trillion yuan in 1997, compared with 10.9 billion yuan in 1991, as shown in panel B of table 1, which has arrived at 23.44 percent of China's GDP of 1997. This demonstrates

that capital markets have played an important role in China's economy. Listed firms in China have raised most of their capital from domestic investors. As of June 30, 1998, the total market capitalization was valued as 2,095 billion Renminbi for A-shares, which consisted of 677 billion Renminbi tradable shares owned by investors and 1,418 shares owned by state and legal persons that are not tradable. However, the total market capitalization for B-shares was only 17 billion Renminbi (China Securities Association 1998).

Following the 1949 revolution, the PRC adopted the Russian system of accounting. Under this system, economic entities account only for the funds distributed by the central government, which makes the discovery of profit or loss difficult. Since 1993, China has attempted to have all domestic enterprises, including SOEs, use accounting standards that comply with the International Accounting Standards (IAS) as defined in the "Accounting System for Selected Joint Stock Companies" and "Enterprise Accounting Standards" issued by the Ministry of Finance. The A-share companies prepare financial statements according to these PRC Accounting Standards (PRC-GAAP). While B-share companies are required to prepare financial statements based on the IAS. At present, significant gaps still exist between the accounting treatments under the PRC-GAAP and the IAS. For example, Chinese accounting standards require the fixed assets to be stated at cost, unlike the IAS historical cost or revalued amount. Similarly, under the PRC-GAAP, inventories are stated at cost, whereas the IAS is the lower of cost or net realizable value. The land use right is classified as intangible assets under the PRC-GAAP but as fixed assets under the IAS. Shareholder equity is valued using the prevailing exchange

rate on the date of contribution under the IAS, but is valued at the official rate under the PRC-GAAP. Provisions for bad debts are required when they have been justified under the IAS, while under PRC-GAAP, they are required when allowed under state regulations with a limit to 0.3% to 0.5% of total receivables per year. Recent study (Haw, Qi, and Wu 1998) suggests that domestic earnings reported in China are value-relevant, but the disclosure mandated by the IAS appears to have rather limited incremental information content.

3. Research Design

3.1. Sample

The sample selection starts with the entire population of A-share listed Chinese firms on the Shenzhen and Shanghai Stock Exchanges for 1995-1997 based on the Taiwan Economic Journal (TEJ) Database. Since the disclosure of depreciation and amortization expenses was not required until 1995, when "Statement of Changes in Financial Position" was mandated, only samples for 1995-1997 are focused on in this study. For each year in 1995-1997, annual financial statements and the monthly equity price adjusted of the sample firms from the TEJ Data Base are obtained.

Table 2 describes the sample selection and composition. Panel A of table 2 reports the sample selection procedure and sample observations. Starting with 2,507 firm-year observations available in the TEJ Data Base, the final sample was reduced

to 1,037 firm-year observations. 1,471 firm-year observations were excluded because of lack of financial statement data (871) and no stock price data (599). Since complete financial and market data are not available for the entire sample for all the three years examined, the number of firms analyzed in the study varies from year to year.

Panel B of table 2 summarizes the sample distribution by year and stock exchange. Following the requirement of the PRC Accounting Law, all PRC firms use the same fiscal year-end of December 31. The sample consists of 551 firm-years listed on the Shanghai Stock Exchange (53%) and 486 firm-years on the Shenzhen Stock Exchange (47%). Following the rapid expansion of listed firms in the PRC, the number of sample firms increases over time from 229 in 1995 to 517 in 1997. Panel C reports sample distribution by two main industries: manufacture and non-manufacture. The manufacturing industry represents the larger group of the sample (58.5%).

3.2. Hypotheses

Previous studies such as Raburn (1986), Wilson (1986, 1987) and Bernard and Stober (1989) examine the significance of cash flows and accruals in a regression whose dependent variable is stock returns. Based on the US data, the results of Rayburn and Wilson are consistent with both components having incremental information, while Bernard and Stober find little such evidence. This study investigates the information content of accruals and examines whether

accruals provide incremental information content beyond that contained in operating cash flows in China's emerging capital market. Thus, a hypothesis is set as the following:

Hypothesis 1. Accruals provide incremental information content beyond that contained in operating cash flows in China's emerging capital market.

Accruals have incremental information content above cash flows (Bowen et al. 1987), and accrual-based earnings is a superior measure of firm performance than cash flows (Dechow 1994). However, one may question whether the superiority of accrual-based earnings is because of managers' discretionary accounting choices. There has been evidence that discretionary accruals have incremental information content in the mature market of the US (Subramanyam 1996), so this study develops another hypothesis to further its discussion to the informativeness of discretionary accruals:

Hypothesis 2. Discretionary accruals provide incremental information content beyond that provided by the non-discretionary component of earnings in China's emerging capital market.

3.3. Research models

In order to test the hypotheses, returns are regressed on the levels of earnings and its components. The series of linear regression models is conducted as follows:

$$RET_{i,t}=\alpha+\beta OCF_{i,t}+\varepsilon_{i,t} \quad (1)$$

$$RET_{i,t}=\alpha+\beta NI_{i,t}+\varepsilon_{i,t} \quad (2)$$

$$RET_{i,t}=\alpha+\beta_1\ OCF_{i,t}+\beta_2 ACCR_{i,t}+\varepsilon_{i,t} \quad (3)$$

$$RET_{i,t}=\alpha+\beta_1\ OCF_{i,t}+\beta_2 NDAC_{i,t}+\varepsilon_{i,t} \quad (4)$$

$$RET_{i,t}=\alpha+\beta_1\ OCF_{i,t}+\beta_2 NDAC_{i,t}+\beta_3 DAC_{i,t}+\varepsilon_{i,t} \quad (5)$$

Where $RET_{i,t}$, $OCF_{i,t}$, $NI_{i,t}$, $ACCR_{i,t}$, $NDAC_{i,t}$, and $DAC_{i,t}$ denote stock returns, operating cash flows, net income, total accruals, non-discretionary accruals and discretionary accruals in year t for firm i respectively.

The dependent variable in all models is cumulative annual market-adjusted stock returns measured over a twelve-month period ending four months after the fiscal year end, which has been found to be an effective measure of the change in firm value (Easton and Harris 1991; Haw, Qi, and Wu 1998). Ball and Brown (1968) state that an observed revision of stock prices associated with the release of the income report would thus provide evidence that the information reflected in income numbers is useful. The empirical approach rests on the definition of information that a message is said to convey information if it causes a change in the receiver's probability distribution of the concerned random variable (Lev 1989). Therefore, the performance measure, such as OCF, NI, or ACCR, that has a higher association (R-square) with stock returns is then interpreted as more effectively summarizing firm performance or more value-relevant. Thus, the coefficients and the explanatory power of these models are compared with the objective of assessing the relative value-relevance and the incremental information content of the variables. (Consistent with the results from the Jones model, all the variables are scaled by lagged total assets.)

The models could be estimated in three ways: (1) pooled both cross-sectionally and intertemporally; (2) cross-sectionally by year; or (3) intertemporally by firm. Only the first two estimation procedures are used in this study due to limitations on the number of years for which data were available to define the variables.

3.4. Measurement of variables

Annual market-adjusted stock returns are measured over the 12-month period ending four months after each fiscal year-end because Chinese firms are required to file their annual financial statements within four months from the fiscal year-end. Following the requirement of PRC Accounting Law, all PRC firms use the same fiscal year-end as of December 31.

Total accruals (ACCR) are computed as consistent with previous studies of earnings management (e.g., Healy 1985; Jones 1991; Dechow, Sloan, and Sweeney 1995; Haw, Qi, Wu and Zhang 1998):

ACCRt = (ΔCurrent asset - ΔCash - ΔShort-term lending)

- (ΔCurrent liability - ΔShort-term borrowing - ΔAccrued income taxes - ΔCurrent portion of long-term debt) – Depreciation – Amortization (1)

where the change (Δ) is computed between time t and t –1.

Operation cash flows (OCF) are measured as the difference between net income (NI) and total accruals.

Discretionary accruals (DAC) are determined using the cross-sectional

variation of the Jones model similarly used in previous studies (e.g., Jones 1991; Cahan 1992; DeFond and Jimbalvo 1994; Subramanyam 1996; Han and Wong 1997; Haw, Qi, Wu and Zhang 1998):

$$ACCR/A_{i,t-1}=a[1/A_{i,t-1}]+b[\Delta REV_{i,t}/A_{i,t-1}]+c[PPE_{i,t}/A_{i,t-1}]+\varepsilon_{i,t} \quad (2)$$

Where

$ACCR_{i,t}$ = total accruals in year t for firm i;

$\Delta REV_{i,t}$ = revenues in year t less revenues in year t-1 for firm i;

$PPE_{i,t}$ = gross property, plant, and equipment in year t for firm i;

$A_{i,t-1}$ = total assets in year t-1 for firm i;

$\varepsilon_{i,t}$ = error term in year t for firm i.

All variables in the model are scaled by lagged assets to reduce heteroscedasticity.

Non-discretionary accruals (NDAC) is defined as the fitted value from Eq.(2):

$$NDAC_{i,t}=\alpha[1/A_{i,t-1}]+\beta[\Delta REV_{i,t}/A_{i,t-1}]+\gamma[PPE_{i,t}/A_{i,t-1}]$$

Where α, β and γ are ordinary-least-square estimates of a, b and c respectively.

Discretionary accruals (DAC) are defined as the residual:

$$DAC_{i,t}=ACCR/A_{i,t-1}-\alpha[1/A_{i,t-1}]-\beta[\Delta REV_{i,t}/A_{i,t-1}]-\gamma[PPE_{i,t}/A_{i,t-1}]$$

As in prior research, gross property, plant, and equipment and change in revenues are included to control for changes in non-discretionary accruals caused by change of economic conditions. Since revenues are an objective measure of firms' operations before managers' manipulations and total accruals includes changes in

working capital accounts, change in revenues are used to control for firms' economic environment. Gross property, plant, and equipment is included because part of total accruals is related to non-discretionary total depreciation expense. The coefficient for $\Delta REV_{i,t}$ is expected to be positive because changes in working capital accounts such as accounts receivable, inventory, and accounts payable are part of total accruals and are positively related to changes in revenue. The expected sign for $PPE_{i,t}$ is negative because high fixed assets are expected to lead to high depreciation.

4. Empirical Results

This study is conducted on a two-stage basis. The first stage is to estimate the non-discretionary and discretionary components of total accruals; and the second stage is to test the hypotheses by regressing returns on earnings and its components. The results of these two stages are reported.

4.1. Estimation of non-discretionary and discretionary components of total accruals

In order to test hypothesis 2, total accruals are decomposed into its discretionary and non-discretionary components using the cross-sectional Jones model. Table 3 reports the parameter estimates of equation (2). The results for full (pooled) sample as well as for each of the three years and for the manufacture and

non-manufacture industries are reported. As predicted, the coefficients are positive on $\Delta REV_{i,t}$ and are negative on $PPE_{i,t}$ for the full sample. All are statistically significant. The regressions by year and by industry yield similar patterns. Thus, total accruals are successfully decomposed into two components: a non-discretionary component and a discretionary component defined as the fitted value and the residual of the regression respectively.

4.2. Regressions of returns on earnings and its components (testing the hypotheses)

In the second stage, the coefficients and the explanatory power of the five regression models of returns on earnings and its components are compared with the objective of assessing the relative value-relevance and the incremental information content of different measures.

4.2.1. Descriptive Statistics

The means and medians are reported in Table 4 for stock returns (RET) and scaled net income (NI), operating cash flows (OCF), total accruals (ACCR), discretionary accruals (DAC) and non-discretionary accruals (NDAC). The full sample of 1,037 firm-years, which is derived from total firm-years covered by the TEJ Database from 1995-1997 (2,507) less the firm-years with missing financial statement data (871) and no stock price data (599), consists of 229 firms in 1995,

291 firms in 1996 and 517 firms in 1997. The mean and median of total accruals are positive for the three years and the full sample, which is unlike most U.S. accrual studies (e.g., Jones 1991; Sloan 1996) where total accruals are negative on an average. This is mainly due to small amount of depreciation expense according to PRC accounting standards, which requires the use of straight-line method and longer life period. Particularly, graphic summaries of NI and OCF for the full sample are presented in figure 1 and figure 2. The standard deviation of net income is 0.081, which is lower than that of operating cash flows (0.149). The two graphs show that net income is less volatile than operating cash flows, which indicates the existence of the use of accruals on earnings management that reduce the divergence of reported earnings.

4.2.2. Pooled Regression Results

Table 4 reports the results of the five regression equations for the full sample. The first row reports the results of Model 1. The adjusted R-square is 0.9% and the regression coefficient is 0.26 that is significant at the 0.01 level. The second row shows the results of Model 2. The adjusted R-square is 8.4% and the coefficient is 1.42 (significant at the 0.01 level). There is an increase in explanatory power. Which suggests that earnings are more value-relevant than operating cash flows for the inclusion of accruals, therefore, China's emerging capital market attaches value to total accruals.

In Model 3, earnings are decomposed into two components: operating cash

flows and accruals. The adjusted R-square of the model is 8.4%, which is higher than regressing returns on operating cash flows alone (Model 1). The coefficients on operating cash flows and accruals are 1.47 and 1.38 respectively, both of which are significant at the 0.01 level. The results imply that both components are significantly associated with stock returns and accruals have incremental information content beyond that provided by operating cash flows alone. Moreover, the weight attached to operating cash flow component is higher than the weight attached to accrual component, which implies that the market prices the two components differently and responds more favorably to cash flows than to accruals.

Model 4 reports results of decomposing non-discretionary component of earnings into operating cash flows and non-discretionary accruals. The coefficients on cash flow and non-discretionary accruals are 0.25 and 1.90 respectively (both are significant at the 0.01 level). The adjusted R-square of the model is 4.8%, which is higher than that of Model 1 (regression of returns on operating cash flows) but lower than that of Model 3 (regression of returns on operating cash flows and total accruals). The results indicate that non-discretionary accruals has incremental information content over operating cash flow, although the increase in explanatory power is not as much as that of total accruals. The evidence suggests the existence of the information content of discretionary accruals.

Model 5 decomposes net income into three parts: operating cash flows, non-discretionary accruals and discretionary accruals. The adjusted R-square is 9.9%, which is higher than that of regressing returns on operating cash flows and non-discretionary accruals. The coefficients on operating cash flows, non-discretionary

accruals, and discretionary accruals is 1.29, 2.41, and 1.18 separately (all are significant at the 0.01 level). These results suggest that both non-discretionary and discretionary components of accruals contribute to the value-relevance of earnings and discretionary accruals provide incremental information content over that contained in non-discretionary component of earnings. However, the market values discretionary and non-discretionary components of accruals differently: the weight attached to the discretionary accruals is lower than the weight attached to the non-discretionary accruals.

In summary, the results from Table 4 reveal that in China's emerging capital market, accruals have incremental information content beyond that contained in operating cash flows and the market seems to respond more favorably to operating cash flows than to accruals. Both discretionary and non-discretionary components contribute to the value-relevance of total accruals, though the market prices them differently. Discretionary accruals provide incremental information content over that provided by the non-discretionary component of earnings.

4.3.3. By-Year Regression Results

Year-by-year results for Model 1-5 are respectively presented in Table 6-10. Since there are substantially less data available for individual year, the coefficients in individual year regressions will be subject to much larger estimation errors. Results for model 1 are presented in Table 6. The sign on operating cash flows is positive in every year and significant at the 0.05 level in two of the three years,

indicating that on average there is a significant association between operating cash flows and stock returns.

Year-by-year results for model 2 are presented in Table 7. The coefficients on net income are positive and significant at the 0.01 level in each of the three years. The significant relation between returns and net income is stable over the three years, which is consistent with the pooled results. The adjusted R-square of each year is higher than the corresponding adjusted R-square of model 1 in Table 6 (e.g., the adjusted R-square of model 2 in 1995 is 4.9% compared to 1.9% of model 1 in 1995). The by-year results are consistent with the pooled results that earnings are more highly associated with security returns than are operating cash flows for the inclusion of accruals. The higher coefficient on operating cash flows than that on accruals for each year indicates that the market responds more favorably to operating cash flows than to accruals, which is consistent with the pooled results.

Table 8 and Table 9 report results on regressions of returns on operating cash flows and accruals' components. The results are on average consistent with both non-discretionary and discretionary components contributing to the value-relevance of earnings. There is an increase in the adjusted R-square with the inclusion of discretionary accruals, which suggests the incremental information content of discretionary accruals. The different coefficients on non-discretionary and discretionary accruals indicate that the market prices the two components differently. However, the lower weight attached to the discretionary component for the pooled results is not robust to the by year results.

In summary, the by-year results are generally consistent with the pooled

results. The results suggest that accruals provide incremental information content beyond that provided by operating cash flows though the market seems to responds more favorably to operating cash flows. Mostly, both non-discretionary and discretionary components of total accruals contribute to the value-relevance of earnings, though the market prices them differently. Discretionary accruals provide incremental information content over the non-discretionary component of earnings in the emerging capital market, which is consistent with the results of prior US studies.

In addition, the by-industry regression results are also reported to examine the robustness of the results to the effect of different industries (Table 11 and 12). Consistent with the pooled and by-year results, the significant coefficients on accruals/discretionary accruals and the increase in explanatory power with the inclusion of accruals/discretionary accruals suggest the incremental information content of accruals/discretionary accruals. In Model 3, the higher t-value on accruals for manufacturing industry than for non-manufacturing industry implies that accruals for manufacturing industry contribute more to the value-relevance of accruals than for non-manufacturing industry. Similarly, the t-values on both non-discretionary and discretionary accruals in Model 5 are higher for manufacturing industry than for non-manufacturing industry. However, the weight attached to discretionary accruals is lower than the weight attached to non-discretionary accruals for both manufacturing and non-manufacturing industries, which is consistent with the pooled regression results.

5. Summary and Conclusion

Although it is generally agreed that stock prices are related to future cash flows of the firm, there is controversy about the usefulness of the accrual components of earnings in signaling stock prices. On the one hand, the Financial Accounting Standards Board maintains that accruals are useful for assessing share values. On the other hand, some financial analysts question the reliability and relevance of earnings because of its accrual components. They argue that managers can manipulate accruals to alter reported earnings through the flexibility accorded under various GAAP. Therefore, accountants are interested to know whether accruals provide incremental information content beyond that provided by operating cash flows.

Prior research such as Wilson (1986, 1987), Rayburn (1986) and Bowen et al. (1987) examine the stock market reaction to accrual and cash flow measures. Although they find that the two components of earnings provide different information to the market about future cash flows, their results are consistent with accruals having incremental information content over operating cash flows. However, Bernard and Stober (1989) find little evidence of the existence of the incremental information content of accruals. While these studies have the findings in the mature market of US, some argue that the same accounting information may have different degree of value-relevance between China's emerging capital market and the developed capital markets due to differences in investor sophistication,

information dissemination, and market efficiency. This study extends this line of research to the emerging capital market of China.

Conducted on a final sample of 1,037 firm-years starting with the entire population of A-share listed Chinese firms, this study uses a return-analysis methodology and examines the information content of accruals in China's emerging capital market. There is a higher association between stock returns and earnings than that between returns and operating cash flows, which suggests the market valuation of accruals. Accruals and operating cash flows together provide higher explanatory power for returns than that provided by operating cash flows alone, which is consistent with the results that accruals have incremental information content over that contained in operating cash flows, though the weight attached to operating cash flows is larger. The significant but different coefficients on discretionary accruals and non-discretionary accruals suggest that both components contribute to the value-relevance of earnings, though the market prices them differently. As with the studies of the developed capital market, the evidence reveals that discretionary accruals are priced by the emerging market and provide incremental information content beyond that contained in the non-discretionary component of earnings.

The association between accruals and returns indicates that accrual adjustments lead to price revisions in China's market. The increase in explanatory power suggests that the inclusion of accruals adds information to operating cash flows, which helps to explain why earnings are more often reported than operating cash flows in the annual reports of Chinese firms. The evidence on this issue reiterates the benefits of accrual accounting and improves our understanding of the

manner in which China's capital market processes accounting information.

The results suggest that the price of a security is influenced by managers' choice of accruals. The incremental information content of discretionary accruals indicates that the opportunities for earnings management inherent in the current Chinese reporting system do not eliminate the usefulness of accounting earnings for valuing shares. The flexibility accorded under the PRC-GAAP allows managers to reflect value-relevant information not captured in the non-discretionary component of earnings. In China, managers' choice of discretionary accruals influences the stock price of the market, which is consistent with accounting choice improving the quality of the communication through earnings reports (Dye and Verrecchia 1995).

As with previous studies, the study uses the Jones model to estimate discretionary accruals. Therefore, one may question how well the Jones model classifies total accruals into discretionary and non-discretionary components. If the model errorneously classifies non-discretionary accruals as discretionary, the coefficient on discretionary accruals will be overstated. That is, discretionary accruals may be implied to be informative when they are actually not. The misclassification problem, which is common to earnings management papers, will reduce the power of the tests. Bernard and Skinner (1996) indicate that the only way to resolve the problem is to develop more reliable ways of measuring earnings management (i.e., narrowing accrual settings, analyzing financial statements in more detail, and applying sophisticated statistical techniques to large data bases).

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Table 1. Development of China's Stock Market

	1991	1992	1993	1994	1995	1996	1997
Panel A. Number of Firms Listed in China's Stock Exchanges							
SHSE [a]	8	29	105	171	188	293	383
SZSE [b]	5	23	76	120	135	237	362
Total	13	52	181	291	323	530	745
Panel B. Market Capitalization of Listed Firms (billion yuan [c])							
SHSE	2.9	71.5	218.8	259.7	252.6	547.8	921.8
SZSE	8.0	49.0	133.5	109.1	94.9	436.5	831.1
Total	10.9	120.5	352.3	368.8	347.5	984.3	1752.9

Source: *Securities Markets Herald,* 1995-1997.

[a] Shanghai Stock Exchange

[b] Shenzhen Stock Exchange

[c] 8.28 yuan = $1US

Table 2. Sample Selection and Composition

Panel A. Sample Selection Procedure

	Number of firm-year
Total firm-years covered by the Taiwan Economic Journal (TEJ) Database, 1995-1997	2,507
Less:	
Firm-years with missing financial statement data	871
Firm-years lack of stock price data at the end of April of each year	599
Final Sample	1,037

Panel B. Sample Description by Stock Exchange and Year

Exchange	1995	1996	1997	Total (%)
Shanghai	140	175	236	551 (53)
Shenzhen	89	116	281	486 (47)
Total	229	291	517	1,037 (100)

Panel C. Sample Description by Industry and Year

Industry	1995	1996	1997	Total (%)
Manufacture	126	169	312	607 (58.5)
Non-manufacture	103	122	205	430 (41.5)
Total	229	291	517	1,037(100)

Table 3. Parameter estimates of the model for accruals

Model: $ACCR / A_{i,t-1} = a[1/ A_{i,t-1}] + b[\Delta REV_{i,t} / A_{i,t-1}] + c[PPE_{i,t} / A_{i,t-1}] + \varepsilon_{i,t}$

	Full Sample	Manufacture	Non-manufacture	1995	1996	1997
Estimate of a (α)	21876 (12.98)***	21697 (10.37)***	21397 (7.80)***	2614 (0.90)	30653 (12.47)***	20980 (6.55)***
Estimate of b (β)	0.0699 (4.53)***	0.0892 (4.02)***	0.0532 (2.47)**	0.0828 (2.75)***	0.0330 (1.46)	0.1136 (4.41)***
Estimate of c (γ)	-0.0443 (-3.76)***	-0.0067 (-0.44)	-0.0890 (-4.83)***	-0.0617 (-2.67)***	-0.0529 (-2.63)***	-0.0381 (-2.16)**

*, **, and *** denote statistical significance at the 10%, 5% and 1% level respectively(two-tailed). Numbers in parentheses denote t-statistics.

Regression variables:

$ACCR_{i,t}$ = total accruals in year t for firm i;

$\Delta REV_{i,t}$ = revenues in year t less revenues in year t-1 for firm i;

$PPE_{i,t}$ = gross property, plant, and equipment in year t for firm i;

$A_{i,t-1}$ = total assets in year t-1 for firm i;

$\varepsilon_{i,t}$ = error term in year t for firm i.

Table 4. Descriptive Statistics for the regression equations for stock returns

(full sample and by-year results)

	Full sample			1995			1996			1997		
Variables	N	Mean	Median	N	Mean	Median	N	Mean	Median	N	Mean	Median
RET	1037	0.0860	0.0392	229	0.0597	0.0099	291	0.0369	-0.0146	517	0.1252	0.0778
NI	1037	0.0672	0.0625	229	0.0589	0.0501	291	0.0545	0.0550	517	0.0780	0.0692
OCF	1037	0.0276	0.0224	229	0.0229	0.0198	291	0.0187	0.0197	517	0.0348	0.0268
ACCR[a]	1037	0.0396	0.0238	229	0.0360	0.0252	291	0.0358	0.0144	517	0.0433	0.0240
DAC	1037	0.0061	-0.0003	229	0.0007	-0.0036	291	0.0071	-0.0003	517	0.0079	0.0003
NDAC	1037	0.0335	0.0254	229	0.0353	0.0289	291	0.0287	0.0227	517	0.0353	0.0262

[a] Since the disclosure of depreciation and amortization expenses was not required until 1995, total accruals of years before 1995 can not be computed.

Returns (RET) refers to cumulative annual market-adjusted stock returns measured over twelve months ending four months after the fiscal year end. Net income (NI) is originally defined in TEJ Database. Total accruals (ACCR) is calculated from equation (1). Operating cash flows (OCF) is the difference between NI and ACCR. Discretionary accruals (DAC) and non-discretionary accruals (NDAC) are determined from the cross-sectional Jones model. All variables are scaled by lagged total assets.

Table 5. Regression of returns on earnings and its components (pooled results)

	Intercept	OCF	NDAC	DAC	ACCR	NI	Adj.R^2 %	F
Model 1	0.0787	0.2640					0.9	10.26***
	(6.32)***	(3.20)***						
Model 2	-0.0091					1.4156	8.4	95.86***
	(-0.60)					(9.79)***		
Model 3	-0.0092	1.4727			1.3766		8.4	48.65***
	(-0.60)	(9.66)***			(9.28)***			
Model 4	0.0154	0.2501	1.9013				4.8	27.25***
	(1.00)	(3.10)***	(6.62)***					
Model 5	-0.0375	1.2933	2.4067	1.1824			9.9	38.76***
	(-2.26)**	(8.23)***	(8.38)***	(7.66)***				

*, **, and *** denote statistical significance at the 10%, 5% and 1% level respectively (two-tailed).

Numbers in parentheses denote t-statistics.

Table 6. Model (1): $RET_{i,t} = \alpha + \beta\ OCF_{i,t} + \varepsilon_{i,t}$

	Estimated Coefficients (t-statistic)			
Year	Intercept	OCF	Adj. R^2 %	F
1995	0.0505 (2.30)**	0.4037 (2.34)**	1.9	5.46**
1996	0.0320 (1.10)	0.2606 (1.23)	0.2	1.52
1997	0.1180 (7.42)***	0.2084 (2.19)**	0.7	4.78**

** significant at the 0.05 level

*** significant at the 0.01 level

Table 7. Model (2): $RET_{i,t} = \alpha + \beta NI_{i,t} + \varepsilon_{i,t}$

	Estimated Coefficients (t-statistic)			
Year	Intercept	NI	Adj. R^2 %	F
1995	-0.0145 (-0.49)	1.2619 (3.57)***	4.9	12.71***
1996	-0.1092 (-3.43)***	2.6815 (8.12)***	18.3	65.94***
1997	0.0619 (3.04)***	0.8114 (4.71)***	4.0	22.23***

*** significant at the 0.01 level

Table 8. Model (3): $RET_{i,t} = \alpha + \beta_1 OCF_{i,t} + \beta_2 ACCR_{i,t} + \varepsilon_{i,t}$

	Estimated Coefficients (t-statistic)				
Year	Intercept	OCF	ACCR	Adj. R^2 %	F
1995	-0.0106 (-0.35)	1.3347 (3.73)***	1.1053 (2.95)***	5.1	7.19***
1996	-0.1106 (-3.47)***	2.7962 (7.57)***	2.6625 (8.03)***	18.1	33.15***
1997	0.0620 (3.05)***	0.8675 (4.82)***	0.7634 (4.29)***	4.0	11.69***

*** significant at the 0.01 level

Table 9. Model (4): $RET_{i,t} = \alpha + \beta_1 OCF_{i,t} + \beta_2 NDAC_{i,t} + \varepsilon_{i,t}$

	Estimated Coefficients (t-statistic)				
Year	Intercept	OCF	NDAC	Adj.R^2 %	F
1995	0.0419 (1.45)	0.4043 (2.34)**	0.2443 (0.46)	1.6	2.83*
1996	0.0115 (0.32)	0.2517 (1.19)	0.7211 (1.01)	0.2	1.26
1997	0.0095 (0.50)	0.1877 (2.12)**	3.0904 (9.15)***	14.5	44.59***

* significant at the 0.1 level

** significant at the 0.05 level

*** significant at the 0.01 level

Table 10. Model (5): $RET_{i,t} = \alpha + \beta_1 OCF_{i,t} + \beta_2 NDAC_{i,t} + \beta_3 DAC_{i,t} + \varepsilon_{i,t}$

	Estimated Coefficients (t-statistic)					
Year	Intercept	OCF	NDAC	DAC	Adj.R^2 %	F
1995	-0.0052 (-0.16)	1.3740 (3.70)***	0.9271 (1.62)	1.1527 (2.94)***	4.8	4.83***
1996	-0.0901 (-2.61)***	2.9691 (7.70)***	1.7934 (2.71)***	2.8306 (8.11)***	18.5	22.97***
1997	-0.0080 (-0.38)	0.4790 (2.72)***	3.2245 (9.37)***	0.3358 (1.92)*	14.9	31.10***

** significant at the 0.05 level

*** significant at the 0.01 level

Table 11. Regression of returns on earnings and its components (manufacturing industry)

	Intercept	OCF	NDAC	DAC	ACCR	NI	Adj.R^2%	F
Model 1	0.0944	0.2552					0.6	4.48**
	(5.70)***	(2.12)**						
Model 2	-0.0079					1.5843	10.3	70.23***
	(-0.39)					(8.38)***		
Model 3	-0.0083	1.6385			1.5601		10.2	35.31***
	(-0.60)	(7.97)***			(8.10)***			
Model 4	-0.0376	0.2268	2.7327				8.4	28.78***
	(-1.56)	(1.96)*	(7.26)***					
Model 5	-0.0665	1.2704	2.9091	1.1653			12.7	30.27***
	(-2.75)***	(5.76)***	(7.88)***	(5.52)***				

*, **, and *** denote statistical significance at the 10%, 5% and 1% level respectively (two-tailed).

Numbers in parentheses denote t-statistics.

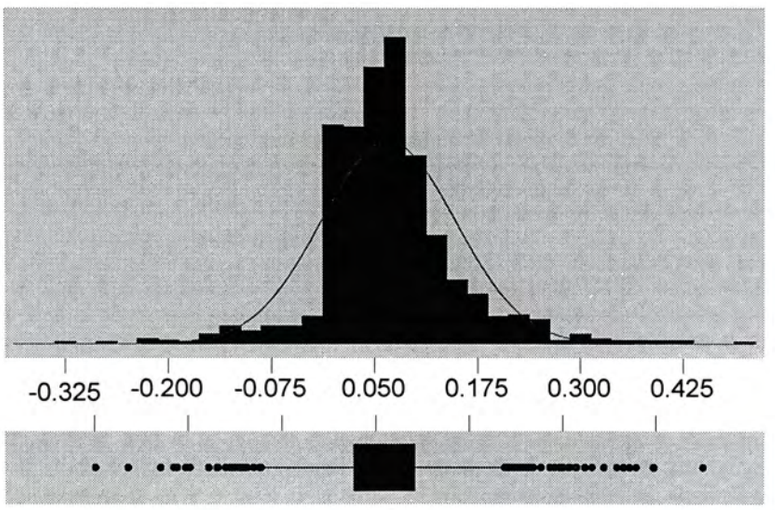
Table 12. Regression of returns on earnings and its components (non-manufacturing industry)

	Intercept	OCF	NDAC	DAC	ACCR	NI	Adj.R^2 %	F
Model 1	0.0566	0.2746					1.2	6.02**
	(3.00)***	(2.45)**						
Model 2	-0.0108					1.1623	5.7	26.90***
	(-0.46)					(5.19)***		
Model 3	-0.0100	1.2223			1.0897		5.8	14.14***
	(-0.43)	(5.32)***			(4.69)***			
Model 4	0.0450	0.2857	0.7545				1.7	4.73***
	(2.27)**	(2.56)**	(1.84)*					
Model 5	-0.0156	1.1960	1.5712	1.0506			5.9	10.00***
	(-0.66)	(5.19)***	(3.57)***	(4.49)***				

*, **, and *** denote statistical significance at the 10%, 5% and 1% level respectively (two-tailed).

Numbers in parentheses denote t-statistics.

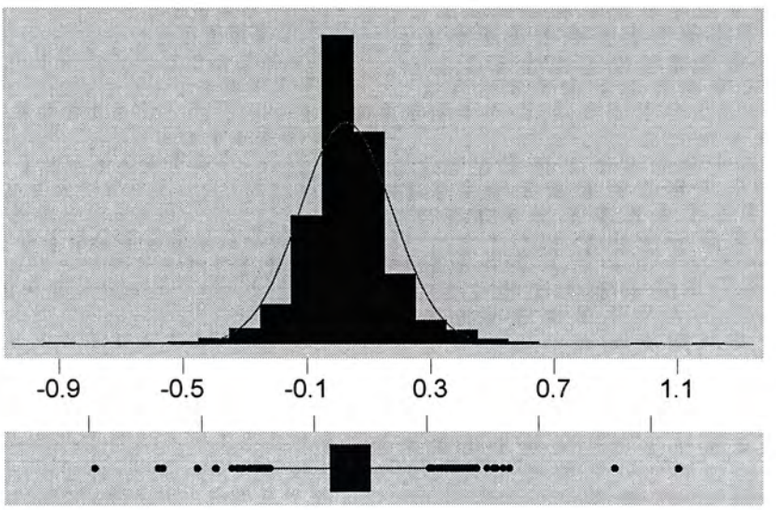
Figure 1



Variable: NI

Mean	6.72E-02
StDev	8.14E-02
Variance	6.63E-03
N	1037
Minimum	-3.2E-01
Median	0.062511
Maximum	0.487695

Figure 2



Variable: OCF

Mean	0.027633
StDev	0.148567
Variance	2.21E-02
N	1037
Minimum	-0.87808
Median	0.02240
Maximum	1.19955